

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1-19. (Canceled)

20. (Currently Amended) A fuel cell system comprising:

a fuel cell which generates electricity by a chemical reaction between a fuel gas supplied to an anode side of the fuel cell and an oxidization gas supplied to a cathode side of the fuel cell;

~~determining means for determining~~ a controller programmed to determine whether there is a possibility that a chemical short is occurring in the fuel cell when supply of the fuel gas and the oxidization gas to the fuel cell is stopped; and

scavenging means for supplying a scavenging gas to the cathode side when it has been determined that there is a possibility that the chemical short is occurring,

wherein the controller communicates with: ~~the determining means includes:~~

gas pressure detecting means for detecting a gas pressure of the fuel gas on the anode side of the fuel cell,

closing means for closing off the anode side of the fuel cell when supply of the fuel gas and the oxidization gas to the fuel cell is stopped,

gas pressure decrease amount obtaining means for obtaining a gas pressure decrease amount of the fuel gas sealed on the anode side by the anode side being closed off by the closing means,

~~consumption amount determining~~ concentration calculating means for ~~determining~~ calculating a consumption amount concentration of the oxidization gas on the cathode side by the obtained gas pressure decrease amount, ~~and~~

~~chemical short possibility determining means for determining that wherein the controller determines that there is a possibility that the chemical short is occurring when the determined consumption amount concentration of the oxidization gas is greater less than a third first reference value,~~

~~wherein the determining means determines again, wherein, when it has been determined that there is a possibility that the chemical short is occurring, the controller determines again whether there is a possibility that the chemical short is occurring, occurring by calculating the concentration of the oxidization gas on the cathode side and determining whether the concentration of the oxidization gas on the cathode side is less than a second reference value that is set to a value larger than the first reference value; and~~

~~wherein the scavenging means supplies the scavenging gas to the cathode side when the concentration of the oxidization gas on the cathode side is less than the second reference value, it has been determined again that there is a possibility that the chemical short is occurring, and~~

~~the determining means sets the third reference value smaller than a predetermined value when it has been determined again that there is a possibility that the chemical short is occurring.~~

21. (Canceled)

22. (Previously Presented) The fuel cell system according to claim 20, wherein the gas pressure decrease amount obtaining means detects a first gas pressure of the fuel gas sealed on the anode side after a first predetermined period of time has passed after the anode side of the fuel cell is closed off, and detects a second gas pressure of the fuel gas sealed on the anode side after a second predetermined period of time has passed after the first gas pressure is detected, and obtains a difference between the first gas pressure and the second gas pressure as the gas pressure decrease amount.

23-25. (Canceled)

26. (Previously Presented) The fuel cell system according to claim 20, wherein the fuel gas is hydrogen gas, the oxidization gas is air, and the scavenging gas is a small amount of air.

27. (Previously Presented) The fuel cell system according to claim 20, wherein the scavenging means supplies to the cathode side an amount of the oxidization gas that is less than the amount of the oxidization gas supplied to the cathode side when the fuel cell is idling, when it has been determined that there is a possibility that the chemical short is occurring.

28-31. (Canceled)

32. (Currently Amended) A control method for a fuel cell system provided with a fuel cell that generates electricity by a chemical reaction between a fuel gas supplied to an anode side of the fuel cell and an oxidization gas supplied to a cathode side of the fuel cell, comprising:

determining whether there is a possibility that a chemical short is occurring in the fuel cell when supply of the fuel gas and the oxidization gas to the fuel cell is stopped; and

supplying a scavenging gas to the cathode side when it has been determined that there is a possibility that the chemical short is occurring,

wherein the determining whether there is the possibility that the chemical short is occurring includes:

detecting a gas pressure of the fuel gas on the anode side of the fuel cell,

obtaining, by the detection, a gas pressure decrease amount ΔP of the fuel gas sealed on the anode side by the anode side being closed off,

~~determining calculating a consumption amount~~ concentration of the oxidization gas on the cathode side by the obtained gas pressure decrease ~~amount-AP, amount,~~ and

determining the possibility that the chemical short is occurring when the determined ~~consumption amount~~ concentration is ~~greater less~~ than a ~~third-first~~ reference value,

wherein, when it has been determined that there ~~was~~ is the possibility that the chemical short ~~was~~ is occurring, it is ~~again-determined~~ again whether there is a possibility that the chemical short is ~~occurring~~ occurring by calculating the concentration of the oxidization gas on the cathode side and determining whether the concentration of the oxidization gas on the cathode side is less than a second reference value that is set to a value larger than the first reference value; and

wherein the scavenging gas is supplied again to the cathode side when ~~it has been determined again that there is a possibility that the chemical short is occurring, and the~~ concentration of the oxidization gas on the cathode side is less than the second reference value.

~~the determining whether there is a possibility that a chemical short is occurring sets the third reference value smaller than a predetermined value when it has been determined again that there is a possibility that the chemical short is occurring.~~

33. (Currently Amended) The control method for a fuel cell system according to claim 32, wherein the detecting a gas pressure detects a first gas pressure of the fuel gas sealed on the anode side after a first predetermined period of time ~~t1~~ has passed after the anode side of the fuel cell is closed off, and detects a second gas pressure ~~P2~~ of the fuel gas sealed on the anode side after a second predetermined period of time has passed after the first

gas pressure ~~P1~~ is detected, and obtains a difference between the first gas pressure ~~P1~~ and the second gas pressure ~~P2~~ as the gas pressure decrease ~~amount ΔP~~ amount.

34. (Canceled)

35. (Previously Presented) The control method for a fuel cell system according to claim 32, wherein the fuel gas is hydrogen gas, the oxidization gas is air, and the scavenging gas is a small amount of air.

36. (Previously Presented) The control method for a fuel cell system according to claim 32, wherein the supplying a scavenging gas supplies to the cathode side an amount of the oxidization gas that is less than an amount of the oxidization gas supplied to the cathode side when the fuel cell is idling, when it has been determined that there is a possibility that the chemical short is occurring.

37. (Currently Amended) The fuel cell system according to claim 22, wherein the ~~determining means~~ controller sets the second predetermined period of time longer than a predetermined period of time when it has been determined again that there is a possibility that the chemical short is occurring.

38. (Currently Amended) The ~~fuel cell system~~ control method according to claim 33, wherein the determining whether there is a possibility that a chemical short is occurring sets the second predetermined period of time longer than a predetermined period of time when it has been determined again that there is a possibility that the chemical short is occurring.

39. (New) A fuel cell system comprising:
a fuel cell which generates electricity by a chemical reaction between a fuel gas supplied to an anode side of the fuel cell and an oxidization gas supplied to a cathode side of the fuel cell;

a controller programmed to determine whether there is a possibility that a chemical short is occurring in the fuel cell when supply of the fuel gas and the oxidization gas to the fuel cell is stopped; and

scavenging means for supplying a scavenging gas to the cathode side when it has been determined that there is a possibility that the chemical short is occurring,

wherein the controller communicates with:

gas pressure detecting means for detecting a gas pressure of the fuel gas on the anode side of the fuel cell,

closing means for closing off the anode side of the fuel cell when supply of the fuel gas and the oxidization gas to the fuel cell is stopped,

gas pressure decrease amount obtaining means for obtaining a gas pressure decrease amount of the fuel gas sealed on the anode side by the anode side being closed off by the closing means,

wherein the controller determines that there is a possibility that the chemical short is occurring when the gas pressure decrease amount of the fuel gas sealed on the anode side is greater than a first reference value,

wherein, when it has been determined that there is a possibility that the chemical short is occurring, the controller determines again whether there is a possibility that the chemical short is occurring by calculating the gas pressure decrease amount of the fuel gas sealed on the anode side and determining whether the gas pressure decrease amount of the fuel gas sealed on the anode side is greater than a second reference value that is set to a value less than the first reference value; and

wherein the scavenging means supplies the scavenging gas to the cathode side when the gas pressure decrease amount of the fuel gas sealed on the anode side is greater than the second reference value.

40. (New) A control method for a fuel cell system provided with a fuel cell that generates electricity by a chemical reaction between a fuel gas supplied to an anode side of the fuel cell and an oxidization gas supplied to a cathode side of the fuel cell, comprising:

determining whether there is a possibility that a chemical short is occurring in the fuel cell when supply of the fuel gas and the oxidization gas to the fuel cell is stopped; and

supplying a scavenging gas to the cathode side when it has been determined that there is a possibility that the chemical short is occurring,

wherein the determining whether there is the possibility that the chemical short is occurring includes:

detecting a gas pressure of the fuel gas on the anode side of the fuel cell,

obtaining, by the detection, a gas pressure decrease amount of the fuel gas sealed on the anode side by the anode side being closed off,

determining the possibility that the chemical short is occurring when the determined gas pressure decrease amount is greater than a first reference value,

wherein, when it has been determined that there is a possibility that the chemical short is occurring, the controller determines again whether there is a possibility that the chemical short is occurring by calculating the gas pressure decrease amount of the fuel gas sealed on the anode side and determining whether the gas pressure decrease amount of the fuel gas sealed on the anode side is greater than a second reference value that is set to a value less than the first reference value; and

wherein the scavenging gas is supplied again to the cathode side when the gas pressure decrease amount of the fuel gas sealed on the anode side is greater than the second reference value.